



## **USDA-ARS PILOT PLANT FACILITIES**

### **1. Eastern Regional Research Center, Wyndmoor, PA.**

Mission: Where people and facilities are in place to conduct research programs of national importance. We welcome opportunities to collaborate with sister agencies, academia, and industrial partners.

Focus: Food and bio-based processing

Pilot Facilities: More than 20,000 sq. ft. of space with utilities and equipment for research at pilot and near commercial scales. Food and bio-based processing pilot plant (10,000 sq. ft.), Dairy processing pilot plant (2,000 sq. ft.), Center of Excellence in Extrusion and Polymer Rheology, Grains pilot plant (2,000 sq. ft.), BSL-2 containment pilot plant (2,000 sq. ft.); BSL-2 challenge facility (2,000 sq. ft.), Bio-Fuels pilot plant (1,000 sq. ft.); Tannery (3,000 sq. ft.).

### **2. National Center for Agricultural Utilization Research Pilot Plant, Peoria, IL.**

Mission: To produce research resulting in new and improved products and technologies, to generate dollars and jobs for the economy and to facilitate technology transfer through pilot plant scale-up capacity. NCAUR produces the information and technologies that:

- Protect the environment and drive the economy by making products and processes using renewable sources that are commercially viable and
- Enables food producers and processors to provide safe, secure and healthy foods that improve the consumers' quality of life.

Focus: Processing technologies, including fermentation, bio-refining, extrusion, jet cooking, high pressure reactions, and supercritical extraction, used to make novel value-added bioproducts from renewable resources. Pilot scale processing is also being used to control agricultural pests (microorganisms, weeds, insects) that



decrease crop yields, pose health hazards, and limit exports for American crops in world trade.

**Pilot Facilities:** The 65,000 sq. ft. NCAUR pilot plant provides a product development and production area that can also function as a business incubator for pre-industrial scale up of technologies. Four, 2-story laboratory bays allow food, chemical and biological processing to be conducted in equipment that includes: 400 lb/hr. screw press, 50 gallon chemical reactors, 100 gallon vegetable oil refiner, centrifugal molecular distillation system, 100 liter freeze dryer, spray dryer, drum dryers, 100 liter fermenters, single and twin screw extruders (food and non-food), compression / injection molders, steam jet cookers and more.

### **3. Southern Regional Research Center, New Orleans, LA.**

**Mission:** to establish government: industry partnerships on post-harvest processing, product enhancement, safety, and use of agricultural commodities. Major areas include Food Safety, Global Food Security, Climate Change, Biofuels, and Health/Nutrition priorities, as well as general Agricultural Sustainability needs to decrease our dependence on fossil fuel. General research objectives include achieving maximum use of agricultural food and fiber products for domestic markets and export, developing new uses and processes for farm products and the means for promoting optimum human health and well-being through improved nutrition, and promoting product safety and quality.

**Focus:** Food processing, oil seed extraction, food safety/prevention of mycotoxins, textile fiber testing, processing and finishing, pyrolysis processing, biofuels, feedstocks, biotechnology/gene insertion plants and microbes, and environmental testing.

**Pilot Facilities:** 3 pilot lab facilities, 40,000 sq. ft. total:

1. Non-Food pilot plant, 5,600 sq. ft.; pilot scale pyrolysis processing, sugarcane/sweet sorghum/sugar processing.
2. Food Processing pilot plant, 4,000 sq. ft.; pilot scale processing of fruit, rice.
3. Textile Mill pilot plant, 30,400 sq. ft.; fiber testing, processing (woven and non-woven), and chemical finishing.



#### **4. Western Regional Research Center, Albany, Ca.**

**Mission:** Located in the San Francisco Bay Area, our pilot plant is used to discover, develop and deploy innovative scientific and technological solutions in agriculture for the public and stakeholders in the Western United States, the Pacific Rim, and beyond.

**Focus:** The pilot plants encompass specialized facilities that have nurtured the successful transfer of many research projects into commercial production during the Center's history. From development of critical conditions for time-temperature tolerance of frozen foods in the 1940s through recent innovations in patented technologies which have been used to develop new small businesses or new business units in larger companies around edible coatings for fresh fruit, edible fruit bars, edible fruit and vegetable wraps, sorting methods for aflatoxin containing crops and healthful vitamin D containing mushrooms, the pilot plant is critical for successful transfer of these and many other food and non-food technologies into commercialization.

**Pilot Facilities:** The pilot plant consists of 22,800 square feet of flexible space which is available for safe confidential processing of agricultural crops leading to edible food products and non-food based bioproducts and biofuels. The space is equally divided into Food Processing Lab (FPL) and Industrial Processing Lab (IP). These pilot labs are equipped with a wide range of process equipment representing most important unit operations needed for foods and crop conversion and component separation. The space allows use of modular equipment, as well as the assembly of coordinated process sequences to meet the needs of a wide range of important agricultural research projects. In addition, over 22,000 square feet of analytical laboratory space is dedicated to evaluation of product quality and functionality.

#### **5. Jamie Whitten Delta States Research Center, Stoneville, MS.**

**Mission:** The missions and goals of the Center's research are addressed through a multidisciplinary approach. Disciplines represented by the scientists include biology, genetics, engineering, chemistry, ecology, entomology, physiology, biochemistry, botany, agronomy, aquaculture, soil science, plant pathology, and



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application technology. Research emphasis is aimed at agricultural problems of the Mid-South area of the U.S. The Center conducts research in many areas of investigation, including: Genetics and basic physiology; control of principal crops enemies; production systems and techniques; equipment innovation and development; safety and human health; economic well-being of both the agricultural producer and the consumer; and technology of pesticide application.

Focus: aquaculture, cotton, crop protection products

Pilot Facilities: two pilot plants (2,500 sq. ft. and 5,000 sq. ft are used in cooperation with private organizations to test the practical applications of propagation techniques and to foster commercial production.